LISTING OF CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method of inspecting a curved object, comprising:
acquiring an inspection image of a curved object using a detector;
adjusting the inspection image to minimize curvature distortion in an adjusted image; and
comparing the adjusted image with a predetermined master image;
further comprising the step of adjusting the brightness values of the image to account for non-uniform illumination, wherein the step of adjusting the brightness comprises the steps of acquiring a scanned image of a uniformly shaded object; measuring brightness values for each pixel in said scanned image; calculating a reference brightness value; establishing scale factors for each pixel in said scanned image based on the reference brightness value; and adjusting corresponding pixel brightness values in the inspection image by applying the scale factors.

2. (Original) The method of claim 1 wherein the object is a golf ball.

3. (Original) The method of claim 2 wherein the detector is a line scan camera that scans the object at a scan line that defines a plane.

4. (Original) The method of claim 3 wherein the object is illuminated with light directed along a plane or a conical section while acquiring the inspection data.

5. (Original) The method of claim 4 wherein the object is illuminated with light directed parallel to the plane while acquiring the inspection data.

6. (Original) The method of claim 4 wherein the light is arranged in a line.

7. (Original) The method of claim 6 wherein the line comprises a linear array of fiber optic bundles that direct the light from at least one light source.

8. (Original) The method of claim 7 wherein the bundles define a gap through which the scan line is directed.

9. (Original) The method according to claim 7 wherein the at least one light source comprises a high intensity discharge light.

10. (Original) The method of claim 6 wherein the line directs the light through at least one lens to provide more uniform illumination along the scan line.

11. (Original) The method of claim 6 wherein the line conforms to a curved surface of the object.

12. (Original) The method of claim 4 wherein the light is polarized according to an illuminating axis of polarization, and a lens for the camera is polarized according to a detecting axis of polarization, wherein the illuminating and detecting axes are configured with respect to one another to reduce glare.

13. (Original) The method of claim 12 wherein the illuminating and detecting axes are positioned at about 90-degree angle to one another.

14. (Original) The method of claim 4 wherein a diffuse, on-axis light source provides supplemental light.

15. (Original) The method of claim 4 wherein a mirror is used to reflect light towards the scan line.

16. (Original) The method of claim 4 further comprising the step of adjusting the light to account for non-uniform object illumination at the scan line.

17. (Original) The method of claim 16 wherein the light is directed through an aperture having varying widths along the line.

18. (Original) The method of claim 16 wherein the light is directed through a comb-like structure having members with varying pitch.

19. (Original) The method of claim 16 wherein the light is directed through polarizers having varying angles of polarization with respect to each other.

20. (Cancelled).

21. (Cancelled).

22. (Original) The method of claim 1 wherein the inspection image is a two-dimensional image.

23. (Original) The method of claim 1 wherein the adjusted image is a three-dimensional image.

24. (Original) The method of claim 1 wherein the detector is an area scan camera.

25. (Currently Amended) A method for inspecting a curved object comprising the steps of

acquiring an image of a white calibration object as a predetermined master image;

acquiring an inspection image of a curved object using a detector; and

adjusting the inspection image to adjust the brightness to account for non-uniform illumination comprising the steps of measuring brightness values for each pixel in the master image; calculating a reference brightness value; establishing scale factors for each pixel in the master image based on the reference brightness value; and adjusting corresponding pixel brightness values in the inspection image by applying the scale factors.

26. (Cancelled).

27. (Currently Amended) The method of claim 25, wherein of adjusting the inspection image's further comprises the steps of applying the formula $V = M \times (I/C)$, where M is the

maximum gray value for a fixed pixel, I is the gray value for a particular pixel in the inspection image and C is the value for that same pixel obtained during calibration.

28. (Original) The method of claim 27, wherein M is 255.

29. (Currently Amended) ~~The method of inspecting a curved object, according to claim 1,~~ A method of inspecting a curved object, comprising:

acquiring an inspection image of a curved object using a detector;

adjusting the inspection image to minimize curvature distortion in an adjusted image; and

comparing the adjusted image with a predetermined master image;

wherein the step of adjusting the inspection image to minimize curvature distortion comprises the steps of:

adjusting at least one pixel in the inspection image in one direction using the formula: $X_{adj} = R \cdot \text{arcsine}\ (X_i/R)$; and

adjusting said pixel in the other direction using the formula: $Y_{adj} = C - ((C-Y_i)/\text{Cos}\ \Theta)$

where R is the radius of the curved object, (X_i, Y_i) are the coordinates of said pixel, C is a reference point on the inspection image, Θ is the angular location above or below the equator of the curved object, and (X_{adj}, Y_{adj}) are the coordinates of the adjusted pixel.

30. (Previously Presented) The method of claim 29 wherein all the pixels in the inspection image are adjusted.

31. (Original) The method of claim 29 wherein the curved object is a golf ball.

32. (Previously Presented) The method of claim 31 wherein C is a reference point of a logo on the golf ball.

33. (Original) The method of claim 32 wherein C is the center of the logo.